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AF/3743

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Inventor(s) : Masanobu SEKI
Serial Number : 09/923,413
Filed : August 8, 2001
For : TEMPERATURE CONTROL APPARATUS
Examiner : Ljiljana by V. Ciric
Group Art Unit : 3743

SUPPLEMENTAL RESPONSE AFTER FINAL UNDER 37 C.F.R. § 1.116

The Honorable Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

September 10, 2004

Dear Sir:

The following amendments and remarks are submitted in response to the Official action mailed February 10, 2004. The Official action set forth a three-month period for response. A petition for a one-month extension of time and a Notice of Appeal were filed on June 10, 2004, making an appeal brief due on or before August 10, 2004. A petition for a one-month extension of time is attached hereto, making an appeal brief or this response due on or before September 10, 2004.

Please amend the above-identified application as follows:

SPECIFICATION AMENDMENTS:

Please rewrite the paragraphs beginning on page 5, line 3 from the bottom of the page, and continuing through page 6, line 4. In these amendments, it is respectfully noted that an additional paragraph was added to this portion of applicant's application in a previous amendment.

-- Figs. 2A and 2B are views showing the construction of a heat exchange unit of Fig. 1 in details, Fig. 2A is a top plan view of one column of the heat exchange unit, and Fig. 2B is a side elevation of one column of the heat exchange unit;

-- Fig. 2C is a partial cross sectional view of the bottom right-hand portion of the heat-exchange unit shown in Fig. 2B [[:]] ;

-- Fig. 2D is a partial cross sectional view of the bottom left-hand portion of the heat-exchange unit shown in Fig. 2B taken along line 2D-2D of Fig. 1; and

-- Fig. 3 is a top plan view showing a portion of the temperature control apparatus of the prior art. --

Please replace the first paragraph beginning on page 9 with the following two paragraphs. In these amendments, it is respectfully noted that an additional paragraph was added before line 1 of page 9 of applicant's application in a previous amendment.

-- Attention is respectfully directed to Fig. 2C. In this figure, the relay block (or second block) 15 is cut away to show the connecting pipe 21 and the sealing member 14. Fig. 2C identifies lengths L1, L2, and L3 and width W. L1 is the distance from the first block 16 to the temperature controlling heat-exchanger 11. L2 is the distance from the relay block 15 to the temperature controlling heat-exchanger 11. L3 is the length of the connecting pipe 21. W is the width of the sealing member. These lengths and width have the following relationship $(L2 + W) < L3 \leq L1$. In other words, the length of the connecting pipe L3 is less than or equal to the first distance (L1) between the first block 16 and the temperature controlling heat-exchanger 11; and the length of the connecting pipe L3 is greater than the sum of (1) the distance L2 between the relay block 15 and the temperature controlling heat-exchanger 11 (L2) and (2) the width of the sealing member (W).

-- Attention is respectfully directed to Fig. 2D. In this figure, the first block (circulating passage block) 19 is cut away. The relay block (or second block) 18 is also cut away to show the connecting pipe 22 and the sealing member 28. Fig. 2D identifies lengths L4, L5, and L6 and width X. L4 is the distance from the first block 19 to the temperature controlled heat-exchanger 12. L5 is the distance from the relay block 18 to the temperature controlled heat-exchanger 12. L6 is the length of the connecting pipe 22. X is the width of the sealing member. These lengths and width have the following relationship $(L5 + X) < L6 \leq L4$. In other words, the length of the connecting

pipe L6 is less than or equal to the first distance (L4) between the first block 19 and the temperature controlled heat-exchanger 12; and the length of the connecting pipe L6 is greater than the sum of (1) the distance L5 between the relay block 18 and the temperature controlled heat-exchanger 13 (L5) and (2) the width of the sealing member (X).

Please amend the Abstract of the Disclosure, which appears on page 14 of the specification, as follows:

-- ABSTRACT OF THE DISCLOSURE

A temperature control apparatus where it ~~which~~ is easy to replace a heat exchange unit to enhance the maintainability and the space efficiency and which can absorb the thermal expansion/shrinkage of a heat exchanger is provided. The temperature control apparatus has ~~comprises~~ a heat exchanger 11 ~~having~~ with a passage 31 for passing a fluid; a connecting pipe 21 connected to the passage of the heat exchanger; a passage block 16 ~~having~~ with a passage for passing the fluid to the heat exchanger; a relay block 15 for forming a passage between the passage of the passage block and the connecting pipe; and sealing means 14 for connecting the connecting pipe movably to the passage of the relay block. In the temperature control apparatus, the length of the connecting pipe 21 is made substantially equal to or slightly shorter than the spacing between the heat exchanger 11 and the passage block 16. --